IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/896,244	§		
Filed: June 28, 2001	§	Examiner:	Lesniewski, Victor D.
Inventors:	§	Group/Art Unit:	2152
Sreeram Duvvuru	§	Atty. Dkt. No:	5681-90800
	§		
	§		
Title: Differentiated Quality of Service Context Assignment and Propagation	§		

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a notice of appeal. The review is requested for the reasons stated below.

Claims 1-27 are pending in the application. Reconsideration of the present case is earnestly requested in light of the following remarks. Please note that for brevity, only the primary arguments directed to the independent claims are presented, and that additional arguments, e.g., directed to the subject matter of the dependent claims, will be presented if and when the case proceeds to Appeal.

The Examiner rejected claims 1-27 under 35 U.S.C. § 103(a) as being unpatentable over Mangipudi et al. (U.S. Patent 6,728,748) (hereinafter "Mangipudi") in view of Lin et al. (U.S. Patent 6,463,068) (hereinafter "Lin"). **Applicant notes the following clear errors in the Examiner's rejection.**

Regarding claim 1, Mangipudi in view of Lin does not teach or suggest propagating said quality of service context with said request in the server system, wherein said propagating comprises sending data indicating the quality of service context with the request. The Examiner previously admitted that Mangipudi does not teach sending data indicating a quality of service context with the request. The Examiner relied on Lin, citing column 3, lines 12-25, to teach sending data

indicating a quality of service context with a request. Lin teaches including a Class of Service (COS) identifier field in the header of a request packet. However, Mangipudi teaches that a class of service is defined for an incoming request, and based on that class of service, the request will be forwarded to a particular server machine (Mangipudi, column 5, lines 36-43; column 6, lines 9-10; column 7, lines 60-64; column 7, line 67- column 8, line 5). Mangipudi's servers are grouped and classified according to the class of service provided by each server. Mangipudi's router delivers requests to an appropriate server. Mangipudi further teaches that the router may also direct a request to a different server, in the same group of servers, for load-balancing purposes. *See* Mangipudi, column 9, lines 25-44 and column 10, lines 25-31. **Since in Mangipudi's system, the same router that determines and assigns a class of service also routes the request to a particular server, Mangipudi clearly teaches away from propagating a quality of service context with a request. It would not be necessary and would serve no purpose for the router in Mangipudi to propagate a quality of service context with the request because the request is already routed to the correct server for the assigned class.** Mangipudi's router simply sends the request to a server for the assigned class of service. The servers in Mangipudi are already assigned to a specific class and requests are directly routed to the appropriate server group. It would serve no purpose and make no sense in Mangipudi's system to send data indicating a quality of service context with the request.

The intended operation of Mangipudi's system is for the router to determine a class of service and send the request to the appropriate server dependent on the class of service. This operation clearly does not require or suggest that any indication of a quality of service context be propagated with the request including sending data indicating the quality of service context with the request. Mangipudi does not mention that the back-end server in any way requires, uses or would benefit from receiving an indication of the assigned class of service. Instead, Mangipudi teaches that each cluster or group of servers can be designated with a particular class of service and that, based on this class, a request will be directed to one of the clusters. *See*, Mangipudi, column 9, lines 53-55. Thus, as noted above, Mangipudi teaches assigning an incoming request a particular class, and based on that class, forwarding the request to a particular server or cluster. Since the receiving server is already designated by the particular class of service and since the requests forwarded to that server are also assigned the same class of service, not only is there no need to a propagate a quality of service context with a request in Mangipudi's system, it would serve no purpose. Thus, one of ordinary skill in the art would not modify Mangipudi's system according to Lin in the manner proposed by the Examiner.

In the Response to Arguments section of the Office Action dated April 9, 2007, the Examiner disagreed with Applicant's arguments above. It appears that the Examiner has misinterpreted the Applicant's statement, "Mangipudi teaches that a class of service is defined for an incoming request and based on that class of service, the request will be forwarded to a particular server machine." The Examiner asserts, "This meets the limitation of propagating a quality of service context with a request." **This is incorrect.** Applicant's statement does not say the indication of the quality of service context is forwarded with a request, only that the request itself (which does not include any indication of the quality of service context) is forwarded to a particular machine. The context as taught by Mangipudi is used to classify a request in order to determine to which machine the request should be forwarded, but no indication of this context is included in the request or forwarded with it. Mangipudi does not teach nor suggest nor have any reason to send an indication of the quality of service context with the request because the Mangipudi's router directs the request to the right class. The server that receives the request is already part of the correct class and handles all requests it receives according to that class. Thus, the server receiving the request in Mangipudi has no need for any quality of service context to be included with the request. Thus, the Examiner's proposed modification of Mangipudi according to Lin makes no sense.

Furthermore, the Examiner has not provided a proper reason to combine Mangipudi and Lin. The Examiner argues that the combination of Mangipudi and Lin "satisfies the need for a routing system that can be flexibly designed and implemented and that ensures that users are directed to web servers and content commensurate with their service levels." However, the Examiner's statement merely reflects the benefits of Mangipudi's own system and does not provide any reason to propagate a quality of service context with a request that has already been routed to the correct server class. In fact, the Examiner's statement quoted above regarding motivation to combine Mangipudi and Lin, was taken from Mangipudi, column 6, lines 32-34. As described in this passage, the system of Mangipudi already ensures that users are directed to web servers and content commensurate with their service levels, **without the Examiner's suggested modification**. Thus, the portion of Mangipudi cited by the Examiner actually shows that one of ordinary skill in the art would not have any reason to modify Mangipudi according to Lin. Moreover, the Examiner's statement of reason to combine Mangipudi and Lin merely refers to benefits provided by any system that includes "routing by class" as taught by Mangipudi. In fact, one seeking "to ensure that users are directed to web servers and content commensurate with their service levels" could simply use Mangipudi's system since Mangipudi's system provides that benefit via a router that directs requests to a particular server or a particular server cluster based on a determined class of service. There would be no need to modify Mangipudi to obtain the Examiner's suggested benefit. As

discussed above, there is no need or motivation for the router in Mangipudi to propagate a quality of service context with the request, either using the COS tags of Lin or otherwise. Instead, the router simply sends the request to a server for the assigned class of service.

In paragraph 19 of the Response to Arguments section of the Office Action mailed April 9, 2007, the Examiner stated, "Providing class of service tags as taught by Lin is seen as another way to ensure that users are directed to web servers and content commensurate with their service levels" (emphasis added). **However, as discussed above, the system of Mangipudi already ensures this, and there would be no benefit to providing another way, as the Examiner suggests.** Changing the class-based routing system of Mangipudi would change Mangipudi's principle of operation. If a proposed modification would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. MPEP 2143.01.VI; *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

In addition, Lin does not teach directing users to web servers or content based on the class of service tags, as suggested by the Examiner. Rather, Lin teaches using the class of service tags as part of an algorithm to determine whether or not to retain or discard particular packets in a network router or switch based on minimum and maximum thresholds associated with the classes of service. For example, Lin states in the Abstract:

> A router includes a classifier that classifies packets assigned to 2^(n-m) classes of service into 2^n classes of service that are supported by the router. The classifier then sets the loss priorities of the respective packets to one of m levels. The router uses a modified weighted random early detection scheme that is based on probabilities of discard associated with 2^(n+m) classes of service to determine whether to retain or discard particular packets (emphasis added).

Furthermore, as stated above, there is no reason for the router in Mangipudi to propagate a quality of service context with the request because the request is already routed to the correct server for the assigned class of service. The evidence of record does not provide any reason for the server to require (or even use) such an indication of a quality of service context. Therefore there would have been no motivation to combine Lin and Mangipudi. Mangipudi's router is designed to send the request to a server for the assigned class of service without any such modification.

In the Advisory Action, the Examiner submits that the use of Lin's tags in the system of Mangipudi "would allow a request to be routed correctly when it must be passed to its destination by various intermediate routers whereas Mangipudi does not consider this scenario in detail, only passing the

request directly to the appropriate server" (emphasis added). Applicant asserts, however, that such COS tags would clearly not be necessary, or even useful, for "correct routing" of a request to the appropriate server in Mangipudi, even the request were passed through an intermediate router, as suggested by the Examiner. In such cases, the ultimate destination is already known and any of various routing mechanisms may be employed to correctly route the request to the appropriate server through any intermediate routers, without needing to know the quality of service context that influenced the selection of the destination. In addition, the cited passage of Lin (column 3, lines 12-25) does not describe that COS tags are necessary, or even useful, in "correctly routing" a packet to an appropriate destination, as the Examiner implies. Instead, they are used in determining a priority for whether or not to retain various packets at all. This does not apply in Mangipudi's system. **Therefore, Applicant again asserts that the Examiner has not provided a sufficient motivation to combine the references, and further asserts that the combined references do not teach all the limitations of claim 1, as discussed in detail above.**

For at least the reasons above, the rejection of claim 1 is not supported by the cited art and removal thereof is respectfully requested. Similar remarks apply to claims 10 and 19 as well.

Applicant also asserts that the rejection of numerous ones of the dependent claims is further unsupported by the cited art. However, since the rejection of the independent claims has been shown to be improper, a further discussion of the rejection of the dependent claims is not necessary at this time.

In light of the foregoing remarks, Applicant submits the application is in condition for allowance, and notice to that effect is respectfully requested. If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicant hereby petitions for such an extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel PC Deposit Account No. 501505/5681-90800/RCK.

Respectfully submitted,

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